

Amendments to the Specification:

Please replace paragraph [0046] of the application as published with the following amended paragraph:

[0046] Hereafter, a third embodiment of the invention will be described. FIG. ~~[[3]]~~4 is a diagram showing a structure of gas state quantity detecting means according to the third embodiment. In the embodiment, a temperature sensor S3 which detects a temperature of the hydrogen off-gas is provided in the discharge passage 33 at a position upstream from the hydrogen discharge valve A3, and a temperature sensor S4 is provided in the discharge passage 33 at a position downstream from the hydrogen discharge valve A3. When the temperature detected by the temperature sensor S3 is shown by TX, and the temperature detected by the temperature sensor S4 is shown by TY, TX is equal to TY ($TX=TY$) in the state where the hydrogen discharge valve A3 is open. On the other hand, in the state where the hydrogen discharge valve S3 is closed, TX is higher than TY ($TX>TY$), since the temperature of the hydrogen off has been increased due to heat generated by the cell reaction. By detecting a difference between the temperature TX and the temperature TY, gas leakage from the hydrogen discharge valve A3 can be detected. The amount of gas leakage corresponding to the difference in temperature ($TX-TY$) is recorded in map data 90b. As the difference in temperature ($TX-TY$) becomes smaller, the amount of gas leakage becomes larger. On the other hand, as the difference in temperature ($TX-TY$) becomes larger, the amount of gas leakage becomes smaller.